

# **EXHIBIT 91**

IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF GEORGIA  
ATLANTA DIVISION

DONNA CURLING, <i>et al.</i> ,	:	
	:	
Plaintiffs,	:	
	:	
v.	:	CIVIL ACTION NO.
	:	1:17-cv-2989-AT
BRAD RAFFENSPERGER, <i>et al.</i> ,	:	
	:	
Defendants.	:	

**OPINION AND ORDER**

**I. Introduction and Overview**

In the 1983 film Groundhog Day, weather man Phil Connors is doomed to repeat the same day over and over again: “I wake up every day, right here, right in Punxsutawney, and it’s always February 2nd, and there’s nothing I can do about it.” The Court can relate; it feels like it’s February 2nd in Punxsutawney. But quite likely, the Court is not alone in this sentiment in many respects. Amidst the many other serious concerns facing the public in this challenging era, issues surrounding election system security, reliability, fairness, and the correct counting of votes continue on the forefront of citizen concerns. And so too, in turn, does voting litigation perforce continue.

and software issues prior to August 2019).) *Second*, while some of Plaintiffs' experts had accessed other related BMD models and Dominion software previously, the specific BMD model and software variation (along with the optical scanners/tabulators programed with Dominion's proprietary software) used in Georgia was not accessible to the Plaintiffs and their cybersecurity expert, Dr. Halderman, until Friday, September 4, 2020 at 5:30 p.m. – and then, only by Court Order.<sup>26</sup> This was just days before the preliminary injunction hearing commenced on September 10, 2020. Upon the Plaintiffs' filing of a discovery dispute notice regarding their access issue, the Court ordered the swift production of a BMD and related ImageCast precinct scanner for Plaintiffs' expert's testing and assessment, subject to various confidentiality provisions and other terms.<sup>27</sup> (As the Dominion system uses an off-the-shelf printer, the Plaintiffs provided their own new printer of the same model used by the Defendants.)

Dr. Halderman's testing of the equipment and software occurred over the short period of time before the scheduled hearing.<sup>28</sup> His evaluation in this abbreviated time frame yielded some supplemental results that supported the

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<sup>26</sup> Other cybersecurity experts such as Mr. Hursti also appear to have also consulted with Dr. Halderman in this process.

<sup>27</sup> The Defendants sought this confidentiality for two purposes: to protect the confidentiality and secrecy of this portion of the election system's functioning as well as to protect Dominion's confidential intellectual property pursuant to its contract with the State.

<sup>28</sup> Dr. Halderman is a Professor of Computer Science and Engineering and Director of the University of Michigan Center for Computer Security and Society. He is a nationally recognized expert in cybersecurity and computer science in the elections field. He testified before the United States Senate Select Committee hearings held on the topic of on Intelligence held on Russian interference in the 2016 U.S. Elections. His testimony and work was referenced in the Senate Committee's report. Professor Halderman has testified multiple times in this case.

Plaintiffs' cybersecurity analysis of the malware vulnerability risks of this specific BMD system. In particular, Dr. Halderman's testing indicated the practical feasibility through a cyber attack of causing the swapping or deletion of specific votes cast and the compromise of the system through different cyber attack strategies, including through access to and alteration or manipulation of the QR barcode.<sup>29</sup> As the National Academies of Sciences, Engineering, and Medicine, found in its seminal report, *Securing the Vote: Protecting American Democracy* 42, 80 (National Academies Press, 2018) ("National Academies Report" or "NAS Report"):

[A]ll digital information – such as ballot definitions, voter choice records, vote tallies, or voter registration lists – is subject to malicious alteration; there is no technical mechanism currently available that can ensure that a computer application – such as one used to record or count votes – will produce accurate results; testing alone cannot ensure that systems have not been compromised; and any computer system used for elections – such as a voting machine or e-pollbook – can be rendered inoperable.

(Doc. 285-1, Ex. 1.)

Dr. Halderman had physical access to the BMD system when conducting his tests, which expedited his experimentation and intrusion into the software system. Evidence presented in this case overall indicates the possibility generally of hacking or malware attacks occurring in voting systems and this particular system through a variety of routes – whether through physical access and use of a USB

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<sup>29</sup> The Defendants disputed this evidence and implied the existence of other possible factors. Given that Dr. Halderman's testimony was presented under seal, the Court only describes this portion of the evidence in a general manner.

the BMD printouts contained outcome-changing errors, the audit would have no chance of detecting that, nor of correcting the reported outcomes.” (*Id.*)

This is essentially what the pilot audits Georgia has conducted accomplish and what the planned audit for the selected contest in the November 2020 election will accomplish.<sup>70</sup> However, this does not serve the purpose and function of a true risk-limiting audit as designed by Dr. Stark to statistically guarantee that the audit will produce a large chance of correcting the election outcome if the reported outcome is wrong.<sup>71</sup>

Additionally, the Court pursued a range of questions with Dr. Adida when he testified about VotingWorks’ application of the RLA for the first time in a state of Georgia’s size in solely one race under these circumstances. The Court cannot

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<sup>70</sup> In conjunction with Dr. Adida’s organization, VotingWorks, the State of Georgia consulted with the Verified Voting Foundation when it conducted a RLA pilot of two election contests in Cartersville in November 2019. (680-1 ¶ 17.) Dr. Stark was on the Board of Directors of Verified Voting for years until he resigned after the President of Verified Voting declined to clarify publicly that the Cartersville pilot audit did not “confirm outcomes” or show that the voting system worked correctly. (*Id.* ¶ 23.) Since that time, Verified Voting’s official positions on RLAs and BMDs have for the most part realigned with Dr. Stark’s findings and opinions. (Tr. Vol. I at 80.) See Statement on Ballot Marking Devices and Risk-Limiting Audits, *available at* <https://verifiedvoting.org/statement-on-ballot-marking-devices-and-risk-limiting-audits/>.

<sup>71</sup> Again, Dr. Stark invented virtually every extant method for performing risk limiting audits, including ballot-polling risk-limiting audits. Dr. Stark was the first person to pilot a ballot-polling risk-limiting audit, in Monterey, CA, in May, 2011. Dr. Stark published the first software tool to conduct ballot-polling risk-limiting audits which was the official tool used by the State of Colorado for its ballot-polling risk-limiting audits and is referenced in Colorado election regulations. (Doc. 809-2 ¶ 10.) The VotingWorks Arlo software to be used in Georgia’s audit incorporates Dr. Stark’s algorithm, and Stark understands that VotingWorks benchmarked the Arlo software against his to confirm Arlo is a correct implementation of the algorithm. (*Id.* ¶ 11.) Understandably, Dr. Stark strenuously disagrees with any attempts to redefine the RLA methodology so that it only corrects some kinds of errors or to modify its application for use on systems with an untrustworthy paper trail because such measures go against the whole principle the RLA was designed to fulfill and weakens the concept to a degree that it destroys the fundamental property that the audit has a large chance of correcting the election outcome if it is wrong. (Tr. Vol. I at 80-83.)

say that it got close to understanding the rationale or specific contours of the sampling methodology to be used by Voting Works.

Suffice it to say, the experts here are in hot debate and approach these issues from different backgrounds and areas of expertise. The Court recognizes that the RLA is deemed by all of the experts as a control valve essential to election integrity. The question they differ on is whether a RLA can be validly implemented in the context of Georgia's QR code BMD voting system. While the Plaintiffs have marshalled a formidable amount of evidence that casts serious doubt on the validity of the use of the RLA with the current system (including the specific RLA methodology that VotingWorks is pursuing here), unless the Court determines that the BMDs must be enjoined from use in Georgia's upcoming elections, the requested remedy appears irrelevant. Absent such an injunction, there is no audit remedy that can confirm the reliability and accuracy of the BMD system, as Dr. Stark has stressed. Plaintiffs do not request, and have not offered, any other proposed audit procedures to accomplish the goal of the RLA. Nor is the Court in a position to reach a judgment regarding whether the Secretary of State's plan to conduct a single RLA assessment in one statewide race under these circumstances provides any meaningful protection or guidance regarding the accuracy of tabulation of the overall voting results (or system). The Court has some major doubts, given the entirety of the evidence discussed here. But under O.C.G.A. § 21-2-498(e) the Secretary of State will be required to implement risk-limiting auditing for all statewide elections "beginning not later than November 1, 2024." The

Secretary and State Election Board still have the opportunity to consider other options for effectuating a somewhat more meaningful RLA process – i.e., by at very least strengthening voting protocols for the 2022 election cycle to encourage voters’ ballot verification and expanding the number of electoral contests audited. That said, the specific relief Plaintiffs ask for ultimately rises or falls on whether the evidence as a whole establishes the Plaintiffs’ likelihood of success on their challenge of the current QR barcode-based BMD system. And the auditing issues considered are relevant to this central claim.

**6. Analysis of Preliminary Injunction Standards as Applied to Plaintiffs’ Primary BMD Vote Related Claims**

The Court has in Section II A. above discussed the standards the Court must weigh and apply in determining the Plaintiffs’ entitlement to preliminary injunctive relief. The Court must first consider whether Plaintiffs have established a substantial likelihood of prevailing on the merits of their claims and related to that, “consider the character and magnitude of the asserted injury to the rights protected by the First and Fourteenth Amendment.” *Anderson*, 460 U.S. at 789.

The interest Plaintiffs seek to vindicate now is the same interest at stake when they brought this litigation under the old voting system in 2017. As the Court first recognized in its August 2018 Order, the Constitution affords Plaintiffs an interest in transparent, fair, accurate, and verifiable election processes that guarantee each citizen’s fundamental right to cast an accountable vote. Plaintiffs assert they will suffer immediate and irreparable harm to this interest if required

by the State to cast a ballot on the BMD system that cannot be confirmed or verified as reflecting their actual vote choices because the votes are tabulated solely from a computer generated QR barcode that is not human-readable and is vulnerable in the current system to failure or breach. They further assert that this injury is exacerbated because votes cast by BMDs pose the significant risk of having the votes altered, diluted, or effectively not counted.<sup>72</sup> Plaintiffs have shown demonstrable evidence that the manner in which Defendants' alleged mode of implementation of the BMD voting system, logic and accuracy testing procedures, and audit protocols deprives them or puts them at imminent risk of deprivation of their fundamental right to cast an effective vote (i.e., a vote that is accurately counted).

The Court views the burden and the threatened deprivation as significant under the *Anderson/Burdick* balancing framework. The right to vote derives from the right of individuals to associate for the advancement of political beliefs that is at the core of the First Amendment and is protected from state infringement by the Fourteenth Amendment. *E.g.*, *Williams v. Rhodes*, 393 U.S. 23, 30–31 (1968); *NAACP v. Button*, 371 U.S. 415, 430 (1963). “Writing for a unanimous Court in *NAACP v. Alabama*, Justice Harlan stated that it ‘is beyond debate that freedom to engage in association for the advancement of beliefs and ideas is an inseparable

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<sup>72</sup> In addition to a burden on the fundamental right to vote, Plaintiffs also assert in-person voters are subject to unequal treatment as compared to provisional and absentee voters whose paper ballots are capable of being meaningfully recounted, reviewed against an independent record to verify the accuracy of the vote tabulation, and may have discrepancies detected and corrected through audits.



aspect of the ‘liberty’ assured by the Due Process Clause of the Fourteenth Amendment, which embraces freedom of speech.” *Anderson*, 460 U.S. at 786-87 (internal citation omitted). As discussed in both the Court’s September 28, 2020 Order and this Order, the individual Plaintiffs have a strong preference to cast votes in person and do not want to be shunted out of the regular exercise of the shared political experience of voting with their fellow citizens at their local precinct location. The First and Fourteenth Amendments afford them this right to associate for the advancement of political beliefs by exercising the franchise at the voting booth and to cast their votes effectively. *See generally, Anderson*, 460 U.S. at 788; *Williams v. Rhodes*, 393 U.S. 23, 30-31 (1968); *Reynolds v. Sims*, 377 U.S. 533, 563 (1964).

“Since the right to exercise the franchise in a free and unimpaired manner is preservative of other basic civil and political rights, any alleged infringement of the right of citizens to vote must be carefully and meticulously scrutinized.” *Reynolds*, 377 U.S. at 562. “It does not follow, however, that the right to vote in any manner and the right to associate for political purposes through the ballot are absolute.” *Burdick v. Takushi*, 504 U.S. 428, 433 (1992). “Although these rights of voters are fundamental, not all restrictions imposed by the States . . . impose constitutionally-suspect burdens on voters’ rights to associate or to choose among candidates.” *Anderson*, 460 U.S. at 788. Rather, the Supreme Court has recognized that States retain the power to regulate their elections to provide fairness, honesty, and order in the democratic process. *Id.* The right to vote is the right to participate in an

electoral process that is necessarily structured to maintain the integrity of the democratic system. *Anderson*, 460 U.S. at 788. “To achieve these necessary objectives, States have enacted comprehensive and sometimes complex election codes.” *Id.* Election laws “invariably impose some burden upon individual voters,” whether they govern the “registration and qualifications of voters, the selection and eligibility of candidates, or the voting process itself,” and such laws “inevitably affect[] — at least to some degree — the individual’s right to vote and his right to associate with others for political ends.” *Id.*; *Burdick*, 504 U.S. at 433. But, “cumbersome election machinery can effectively suffocate the right of association, the promotion of political ideas and programs of political action, and the right to vote.” *Williams*, 393 U.S. at 39 (Douglas, concurring). And, “[w]hen a State exercises power wholly within the domain of state interest, it is insulated from federal judicial review. But such insulation is not carried over when state power is used as an instrument for circumventing a federally protected right.” *Reynolds*, 377 U.S. at 566 (quoting *Gomillion v. Lightfoot*, 364 U.S. at 347).

Georgia’s Election Code mandates the use of the BMD system as the uniform mode of voting for all in-person voters in federal and statewide elections. O.C.G.A. § 21-2-300(a)(2). The statutory provisions mandate voting on “electronic ballot markers” that: (1) use “electronic technology to independently and privately mark a paper ballot at the direction of an elector, interpret ballot selections, communicate such interpretation for elector verification, and print an elector verifiable paper ballot;” and (2) “produce paper ballots which are marked with the

elector's choices in a format readable by the elector" O.C.G.A. § 21-2-2(7.1); O.C.G.A. § 21-2-300(a)(2).

Plaintiffs and other voters who wish to vote in-person are required to vote on a system that does none of those things. Rather, the evidence shows that the Dominion BMD system does not produce a voter-verifiable paper ballot or a paper ballot marked with the voter's choices in a format readable by the voter because the votes are tabulated solely from the unreadable QR code. Thus, under Georgia's mandatory voting system for "voting at the polls"<sup>73</sup> voters must cast a BMD-generated ballot tabulated using a computer generated barcode that has the potential to contain information regarding their voter choices that does not match what they enter on the BMD (as reflected in the written text summary), or could cause a precinct scanner to improperly tabulate their votes.

As a result, each of the Plaintiffs attest that they are forced to forego their right to full and unfettered participation in the political process and to alternatively exercise their right to vote using Georgia's absentee ballot regime which carries its own burdensome procedures, though they may be minimal as compared to the burdens created by the BMDs.<sup>74</sup> Absentee voting itself has been the subject of

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<sup>73</sup> O.C.G.A. § 21-2-300(a)(2) (effective April 2, 2019) (mandating a new uniform statewide voting system that provides for "the use of scanning ballots marked by electronic ballot markers and tabulated by using ballot scanners for voting at the polls and for absentee ballots cast in person").

<sup>74</sup> Georgia law permits a registered voter to vote via absentee ballot for any reason. *See* O.C.G.A. § 21-2-380. Voters under age 65 must submit separate, distinct applications for each election (i.e. primary, general, runoff) sufficiently early to their county registrar's office to ensure timely receipt of their absentee ballot. O.C.G.A. § 21-2-381(a)(1)(A); O.C.G.A. § 21-2-381(a)(1)(G). Absentee ballot applications may be denied if the registrar determines that the information provided by the voter in the application does not match the voter's information on file with the registrar's office

much constitutional litigation where the implementation of these procedures resulted in the rejection of absentee ballots and voter disenfranchisement. To avoid being denied the ability to verify their votes on the BMD system, Plaintiffs must trade one unfavorable burden for another. Plaintiffs are left with the choice of having to run another gauntlet of the absentee voting process because of potential uncertain postal delivery issues, untimely processing by the registrar's office, signature matches, etc. As discussed in Section III D herein, Plaintiffs have shown a significant burden resulting from the accuracy and voter invalidation issues that affect Dominion's scanner/tabulators and adjudication software used for determining voter intent and tallying hand-marked absentee ballots. A choice between two evils is no choice at all; the Equal Protection Clause guarantees the opportunity for equal participation by all voters in the election regardless of which method they choose to cast their vote.

That Plaintiffs and other voters have the alternative of casting an absentee hand-marked paper ballot does not lessen or absolve the State of the burdens

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or if the voter's signature on the absentee ballot envelope does not match the signature on their voter registration card. O.C.G.A. § 21-2-381(b)(2)(3). Once received and completed, voters must sign an oath on their absentee ballot envelope and personally mail or deliver their ballot to the board of registrars or absentee ballot clerk or to a dropbox. O.C.G.A. § 21-2-385(a). Georgia does not provide pre-paid postage for the return of the absentee ballot, and thus, voters must pay for their own return postage to vote by mail. The State of Georgia does not count mail ballots received after the closing of polls at 7:00 p.m. on Election Day. *See* O.C.G.A. § 21-2-386(a)(1)(F). This is true even if a ballot arrives late for reasons objectively outside the voter's control, and even if the ballot was postmarked weeks before Election Day or alternatively, on Election Day. Absentee ballots will be rejected if not received by election day or "[i]f the elector has failed to sign the oath, or if the signature does not appear to be valid, or if the elector has failed to furnish required information or information so furnished does not conform with that on file ... or if the elector is otherwise found disqualified to vote[.]" O.C.G.A. § 21-2-386(a)(1)(C).

imposed by the State's chosen, preferred, primary voting system, in which it invested hundreds of millions of taxpayer dollars. The State opposes a court-ordered switch to hand-marked paper ballots for in-person voters at the polls. The State does not wish to be forced into an administratively burdensome system of carrying out an election using hand-marked ballots and voters do not wish to be forced into an absentee regime that contains its own distinct array of burdens and uncertainties associated with whether the ballot will be accepted and counted.

While the Court recognizes Plaintiffs' strong voting interest and evidentiary presentation that indicate they may ultimately prevail in their claims, the Court must perforce address the posture of this case as a whole as well as the Plaintiffs' burdens "against the interests the State contends justify that burden, and consider the extent to which the State's concerns make the burden necessary." *Timmons v. Twin Cities Area New Party*, 520 U.S. 351, 358 (1997); *New Georgia Project v. Raffensperger*, ---F.3d. ---- 2020 WL 5877588, at \*2 (11th Cir. 2020).

In election cases, the Supreme Court and Eleventh Circuit have made ever more abundantly clear the mandate that district courts must exercise great restraint in considering the grant of injunctive relief that requires new rules on the cusp of an election where the Court's Order could cause electoral disruption and voter confusion. *Purcell v. Gonzalez*, 549 U.S. 1, 4-5 (2006); *Republican National Committee v. Democratic National Committee*, --- U.S. ---, 140 S.Ct. 1205, 1207 (2006); *Republican Nat'l Comm. v. Common Cause R.I.*, --- U.S. ---, 2020 WL 4680151, at \*1 (U.S. Aug. 13, 2020); *Merrill v. People first of Alabama*, ---S. Ct ---

also even if such relief had been ordered on September 15th, the day after the injunction hearing concluded, based on election operations evidence presented in connection with the hearing. The substantial risks and long-run threats posed by Georgia's BMD system, at least as currently configured and implemented, are evident. However, the Court – especially after reviewing evidence regarding election staff management and operations challenges in the June and August 2020 elections – cannot envision that state and county elections staff (including paid temporary contract personnel) would be equipped to move the system and voters through such a major operational change without chaotic disruptions occurring anew.

Risks are posed both by a sudden shift to a statewide hand-marked paper system and proceeding with the BMD system. Ultimately, the Court must find that imposition of such a sweeping change in the State's primary legally adopted method for conducting elections at this moment in the electoral cycle would fly in the face of binding appellate authority and the State's strong interest in ensuring an orderly and manageable administration of the current election, consistent with state law. So, for this reason alone, despite the strength of Plaintiffs' evidence, the Court must decline the Plaintiffs' Motions for Preliminary Injunction.

### **C. Coalition Plaintiffs' Claims Relating to Ballot Secrecy**

The Coalition Plaintiffs seek to enjoin the use of BMDs on the basis that they severely burden the fundamental right to vote by depriving voters of secrecy of the ballot. They assert two theories as to how BMDs result in the deprivation of ballot

because of system breach, breakdown, or crashes. Any operational shortcuts now in setting up or running election equipment or software creates other risks that can adversely impact the voting process.

The Plaintiffs' national cybersecurity experts convincingly present evidence that this is not a question of "might this actually ever happen?" – but "when it will happen," especially if further protective measures are not taken. Given the masking nature of malware and the current systems described here, if the State and Dominion simply stand by and say, "we have never seen it," the future does not bode well.

Still, this is year one for Georgia in implementation of this new BMD system as the first state in the nation to embrace statewide implementation of this QR barcode-based BMD system for its entire population. Electoral dysfunction – cyber or otherwise – should not be desired as a mode of proof. It may well land unfortunately on the State's doorstep. The Court certainly hopes not.


The Court recognizes the major challenges facing the Secretary of State's Office in rapidly implementing a new statewide voting system. Yet the vital issues identified in this case will not disappear or be appropriately addressed without focused State attention, resources, ongoing serious evaluation by independent cybersecurity experts, and open-mindedness. The Secretary of State and Dominion are obviously not without resources to tackle these issues. And at very least, the Court cannot fathom why, post-election, the State and Dominion would not at least be moving toward consideration of the software upgrade option Dominion

originally promised, allowing voters to cast ballots that are solely counted based on their voting designations and not on an unencrypted, humanly unverifiable QR code that can be subject to external manipulation and does not allow proper voter verification and ballot vote auditing.

Time will tell whether Act V here can be still avoided or at least re-written.

For the foregoing reasons, the Court **DENIES** the Curling Plaintiffs' Motion for Preliminary Injunction [Doc. 785] and **DENIES IN PART AND GRANTS IN PART** the Coalition Plaintiffs' Motion for Preliminary Injunction on BMDs, Scanners, and Tabulators, and Audits [Doc. 809].

**IT IS SO ORDERED** this 11th day of October, 2020.

  
Honorable Amy Totenberg  
United States District Judge